Coastal Dead Zones

The size and number of marine dead zones—areas where the deep water is so low in dissolved oxygen that sea creatures can't survive—have grown explosively in the past half-century. Yellow circles on this map show the location of observed eutrophic zones. Red dots show where hypoxic zones have been observed.

It's no coincidence that dead zones occur downriver of places where land is intensively used for agriculture. Some of the fertilizer we apply to crops is washed into streams and rivers. Fertilizer-laden runoff triggers explosive planktonic algae growth in coastal areas. The algae die and rain down into deep waters, where their remains are like fertilizer for microbes. The microbes decompose the organic matter, using up the oxygen. Mass killing of fish and other sea life often results.

Satellites can observe changes in the way the ocean surface reflects and absorbs sunlight when the water holds a lot of particles of organic matter. Darker blues in this image show higher concentrations of particulate organic matter, an indication of the overly fertile waters that can culminate in dead zones.

For more information:

earthobservatory.nasa.gov/IOTD/view.php?id=44677